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Applicants: FENG-SHEN HSIAO

Title : ROTATABL E EXTENSION CORD ASSEMBLY

20 Claims

8 Sheets of Drawings

William E. Pelton
Reg. No. 25,702
Donald S. Dowden
Reg. No. 20,701
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, New York 10036
(212) 278-0400

ROTATABLE EXTENSION CORD ASSEMBLY

2 BACKGROUND OF THE INVENTION

3 1. Field of the Invention

4 The invention is related to an extension cord assembly, and more particularly to
5 a rotatable extension cord assembly having two rotatable bases, on which sockets are
6 defined, respectively and rotatably equipped at opposite sides of a housing of the
7 extension cord assembly. With the two rotatable bases, the user is able to use the
8 extension cord easily without worrying that wires of an electrical apparatus connected to
9 the extension cord assembly will become tangled.

10 2. Description of Related Arts

With reference to Fig. 8, a general conventional extension cord assembly is constructed by a housing (50) with a top plate and a bottom plate. On the top plate, multiple pairs of first holes (51) and multiple second holes (52) are defined, wherein each second hole (52) corresponds to a pair of the first holes (51) to form a complete socket. At the bottom plate, an extension cord (not shown) is provided for connection to a power source, i.e. a wall outlet such that any electrical apparatus in connection with the extension cord assembly is able to be activated.

18 When the conventional extension cord assembly is used and when the user is
19 walking around with a hand-held electrical tool, before long, the wires of the electrical
20 tool will be tangled or the casing will be moved from its original position, which may put
21 the user in jeopardy. That is, if the extension cord assembly housing (50) is moved to a
22 wet location, the moisture may cause an electrical short and damage the electrical tool or
23 an electrical shock to the user.

24 To overcome the mentioned shortcomings, an extension cord assembly in

1 accordance with the present invention is introduced to mitigate the aforementioned
2 problems.

3 **SUMMARY OF THE INVENTION**

4 The objective of the present invention is to provide an extension cord assembly
5 with two rotatable bases on which sockets are formed such that movement of any
6 electrical apparatus in connection with the extension cord assembly will not cause the
7 extension cord assembly to move and thus a user's safety is secured.

8 To accomplish the objective, the extension cord has a housing with two opposite
9 sides where two bases are respectively and rotatably fitted, wherein each base has at least
10 one socket formed thereon for electrical connection with electrical appliances.

11 The features and structure of the present invention will be more clearly
12 understood when taken in conjunction with the accompanying figures.

13 **BRIEF DESCRIPTION OF THE DRAWINGS**

14 Fig. 1 is an exploded perspective view of the extension cord assembly in
15 accordance with the present invention;

16 Fig. 2 is a perspective view of a first embodiment of the extension cord assembly
17 in Fig. 1;

18 Fig. 3 is a side plan view of the extension cord assembly of Fig. 1;

19 Fig. 4 is an exploded perspective view showing a second embodiment of a base
20 and a casing;

21 Fig. 5 is a front plan view of the extension cord assembly of Fig. 1;

22 Fig. 6 is an exploded perspective view showing a second embodiment of a base
23 and a casing;

24 Fig. 7 is a perspective view of a second embodiment of an extension cord

1 assembly in accordance with the present invention; and

2 Fig. 8 is a perspective view of a conventional extension cord assembly.

3 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

4 With reference to Fig. 1, an extension cord assembly in accordance with the
5 present invention has a housing composed of a front casing (10) and a rear casing (20).
6 The front and rear casings (10,20) are configured to be symmetrical each other. Each of
7 the front and rear casing (10,20) is formed with a rectangular center chamber (11,21)
8 with opposite sides that respectively communicate with a trapezoid upper chamber
9 (12,22) and a trapezoid lower chamber (13,23). Therefore, each of the front casing (10)
10 and the rear casing (20) is formed to be a substantially I-shaped casing. After the two
11 casings (10,20) are correspondingly combined, two lengthwise spaces (not numbered)
12 are accordingly formed at opposite sides of the two rectangular center chambers (11,21)
13 and between the upper chambers (12,22) and the lower chambers (13,23).

14 Two bases (30,30'), each of which has multiple sockets (31,31') formed
15 thereon, are respectively placed in the two lengthwise spaces and rotatably received
16 between the upper chamber (12,22) and the lower chamber (13,23).

17 A circuit board (40) is to be installed inside the rectangular center chambers
18 (11,21) after the front casing (10) and the rear casing (20) are combined. A switch (42)
19 and multiple telephone wire connectors (43) are electrically provided on the circuit
20 board (40). The switch (42) is provided to control whether all the sockets (31) of the two
21 bases (30,30') are able to conduct electricity. The two bases (30,30') are electrically
22 connected to the circuit board (40) such that each socket (31) is able to conduct
23 electricity when a wire (50) extending from the circuit board (40) is connected to an
24 outlet (not shown) in a wall.

With reference to Figs. 1, 2 and 3, on a front face (14) of the front chamber (10), multiple rectangular through windows (15) and multiple circular holes (16) are defined to respectively communicate with the upper chamber (12) and the lower chamber (13). Thereby, when the circuit board (40) is retained inside an upper space composed of the upper chambers (12,22), the telephone wire connectors (43) and the switch (42) are able to be exposed through the multiple windows (15) for connection with telephone wires (not shown). Moreover, two pairs of coaxial cable connectors (45) are received inside the lower chambers (13,23) and extend through the circular holes (16).

To accomplish the rotatable connection between the bases (30,30') and the housing, the present invention discloses two embodiments as shown in Figs. 4 and 6, respectively.

With reference to Figs. 1, 4 and 5, each base (30,30') has two opposite ends from which an axle (32) formed with a head (33) extends out therefrom. Further, two protrusions (34) are also respectively formed at the opposite ends of the bases (30,30').

As foregoing mentioned, since the front casing (10) and the rear casing (20) are substantially symmetrical with each other, rotating structures defined in the rear casing (20) are only discussed hereinafter, and the rotating structures of the front casing (10) are thus omitted for brevity. As shown in Fig. 4, the rear chamber (20) has two opposite partitions (24,25) that respectively construct the upper chamber (22) and the lower chamber (23). Along a flange of each partition (24,25), two semicircular cuts (26) are respectively defined and apart from each other. Moreover, multiple tiny through holes (27) are defined in the two opposite partitions (24,25) and distributed near each semicircular cut (26) to correspond to the protrusion (34) of the base (30). As shown in

1 Figs. 1 and 4, a semicircular cutout (27') is defined along the flange of each partition
2 (24,25) and near the semicircular cut (26). Thereby after the front casing (10) and the
3 rear casing (20) are combined, two semicircular cutouts (27') of each casing (10,20) are
4 formed as a circular hole otherwise identical to the other through holes (27) to
5 correspond to the protrusion (34).

6 To assemble the two bases (30,30') in accompaniment with the front casting
7 (10) and the rear casing (20), the two axles (32) at the opposite ends of each base (30,30')
8 are respectively passed through the two circular openings composed of the four
9 corresponding semicircular cuts (26) of the two casings (10,20). Thereby, two heads (33)
10 on the two axles (32) of each base (30,30') are respectively retained inside the upper
11 chambers (12,22) and the lower chambers (13,23). Thus, the two bases (30,30') are
12 rotatably connected between the upper chambers (12,22) and the lower chambers
13 (13,23).

14 Moreover, the two protrusions (34) at opposites ends of each base (30,30') in
15 conjunction with the tiny through holes (27) and cutouts (27') allow the base (30,30') to
16 be oriented at a particular position when the protrusions (34) are correspondingly
17 matched with the through holes (27) and the cutouts (27').

18 For example, as shown in Fig. 2, one base (30) with the surface having sockets
19 (31) is rotated to face a direction X when the two protrusions (34) just correspond to and
20 are received in the two holes (27). The other base (30') is faced toward another direction
21 designated with Y.

22 With reference to Fig. 6, the through holes (27,27') as shown in Fig. 4 are
23 replaced by arcuate slots (28) in this embodiment. These arcuate slots (28) can be formed
24 as through slots as shown in the drawing, or as shallow slots defined at an external

1 surface of the partitions (24,25). Thereby the protrusions (34) are able to slide along
2 these arcuate slots (28) when the entire base is rotated.

3 With reference to Fig. 7, a second embodiment of an extension cord assembly
4 in accordance with the present invention is shown. The extension cord assembly is
5 substantially the same as that of Fig. 2. The difference is that the telephone wire
6 connectors (43) and the coaxial cable connectors (45) are all omitted. Still, the two bases
7 (30,30') are rotatably provided between the upper chambers (12,22) and the lower
8 chambers (13,23) as shown in the embodiment in Fig. 6.

9 The foregoing description of the preferred embodiments of the present
10 invention is intended to be illustrative only and, under no circumstances, should the
11 scope of the present invention be restricted by the description of the specific
12 embodiment.